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A THEORETICAL STUDY OF THE REQUIREMENT FOR A CRITICAL-SKILLS INVENTORY CATALOGUE FOR CIVIL DEFENSE

JAMES PASCAL RICHARDSON

A THEORETICAL STUDY OF THE REQUIREMENT FOR A CRITICAL-SKILLS INVENTORY CATALOGUE FOR CIVIL DEFENSE

By

James P. Richardson
Lieutenant Commander, United States Navy

The sophistication of the National Industrial productive entity, the population size, concentrations of the density-profiles of critical skills and the reaction of the populace (to the threat of nuclear attack) as a function of geographic location all act to encumber a rational post-attack extrapolation of National productive capability. In an effort to define the need for a post-attack plan of Industrial recovery, Federal Departmental areas of responsibility were delineated, population decimation for casualty rates of 30%, 50% and 70% was discussed and the requirement for an efficient post-attack recovery plan was proposed. The proposition is based on the capability of current Electronic Data Processing Systems conjugated to permit the cataloguing of individuals possessing skills critically needed for rapid and efficient post-attack recovery.

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A THEORETICAL STUDY OF THE REQUIREMENT FOR A CRITICAL-SKILLS INVENTORY CATALOGUE FOR CIVIL DEFENSE

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by

James Pascal Richardson

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PREFACE

This is not an argument for or against War. Nor does this paper concern itself with the morality of war. While certain truths are self evident, there will be no implicit statements concerning the military feasibility of the use of any particular instrument of war.

In the development of the paper, it has been found expedient to assume total-population casualties of 30%, 50% and 70%. The rigidity of these figures, while explicit, is not intended to connote precision in the assumption. The methods whereby an enemy might achieve these casualty rates are left to the discretion of the reader. However, the primary weaponry is presumed to be nuclear. For purposes of simplification and ease of construction, the casualties were proportionately profiled from major population centers.

The reader is asked to stipulate that this serves a twofold purpose. First; it affords a degree of freedom from synthesizing a Strategic Target List, and freedom from foolish interpolation of assertions extraneous to the argument. More important, it offers the reader information that is within the realm of common knowledge; i.e., San Francisco, California is somewhat larger than Yorktown, Virginia. Both are of a physical size superior to a missile silo.

CHAPTER I

THE PROBLEM AND DEFINITION OF TERMS USED

The nature and methods of warfare are continually changing. It is not impertinent to suggest that in the event of international war, targets might not be limited to that class termed 'purely military'. The post-attack political and economic strength of the United States will be directly dependent on the immediate reaction capabilities of the surviving population.

An economic allocation and distribution of all resources necessary to maximize our National posture will then be of primary concern. One facet pertinent to minimizing the reaction time and maximizing this posture may have been overlooked in the past. At the present, no method is known to exist whereby the qualifications of the individual could be readily correlated with existing physical resources, within a framework of national priority, for the purpose of maximizing this posture.

I. THE PROBLEM

Statement of the Problem. It was the purpose of this study (1) to indicate the environmental restrictions of the organization best qualified to assess the post-attack damage to the United States; (2) to show a relationship between the complementary civil-municipal and industrial span of control; (3) to discuss

problem-areas incurred by large casualty rates and the resulting difficulties in maximizing our national posture; and (4) to propose one course of action toward more rapidly regaining maximum utilization of productive capability.

Importance of the study. The productive capability of the United States has long been a recognized factor in the world's economy. A United States capable of maintaining a post-attack posture of decision and purpose would be less vulnerable to interlopers. The United States would achieve post-attack international recognition in accordance with the degree of the apparency of that strength. The reflexive post-attack capability of this National productive entity has not been recently tested. Pre-attack and mid-attack plans and capabilities are continually reviewed by the Executive Departments, applicable agencies and groups. The responsibility for Civil Defense was turned over to the Department of Defense on 1 August, 1961. From this, one can logically infer that the immediate post-attack coordination and regulation of civil effort will be in accordance with instructions authorized by the President, via the Department of Defense to local authorities. A rapidly implementable planned course of action pertaining to the maximization of our post-attack industrial-economic posture is, therefore, axiomatic. In this study, an attempt was made to ascertain the feasibility, establish partial requirements and suggest one method of implementing such a plan.

II. DEFINITIONS OF TERMS USED

Casualty. Any person dead, dying or incapable of normal productive effort.

Productive Entity, Industrial Entity. Throughout this report, the above terms are used interchangeably and should be interpreted as definitive of the sum total of the productive capability of the titular organization to which they refer.

Skills profile. The productive capability of any organization presumes an operating balance between various levels of intelligence and technical competence within specific fields of endeavor.

War-Game. As used herein, War-Game is the systematic assimilation, rational manipulation and intelligent interpretation of data relating probable strategic and tactical results of attacking systems operating in a defensive environment.

CHAPTER II

REVIEW OF THE LITERATURE

The amount of literature, both specific and general, pertaining to the functions and responsibilities of Civil Defense is massive. Therefore, only a review of such data pertinent to the present argument will be included.

I. EARLY DEVOLUTION OF THE OFFICE OF CIVIL DEFENSE

The Office of Civil Defense developed from assignments and responsibilities of the National Security Resources Board. The following substantially condenses the organizational assignments of this responsibility.

"In 1953, the Board was abolished under Reorganization Plan No. 3 of 1953, and its duties were assigned to the Office of Defense Mobilization, which became a permanent part of the Executive Office of the President. In 1958, ODM absorbed the Federal Civil Defense Administration, and became the Office of Civil and Defense Mobilization."[1]

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[1] Robert K. Carr, Marver H. Bernstein and Donald H. Morrison, American Democracy in Theory and Practice (New York: Rinehart and Company, Inc, 1960), p. 793.

II. CURRENT AREAS OF RESPONSIBILITY OF THE OFFICE OF CIVIL DEFENSE

On 1 August 1961, the President of the United States, by executive order, transferred basic responsibility for civil defense to the Department of Defense.[2] During this transfer, certain functional powers and responsibilities were held by the Office of Civil Defense Mobilization, which was at this time renamed The Office of Emergency Planning. Primarily, these responsibilities include:

> Planning continuity of state and local governments, the natural disaster relief program, the defense mobilization program, the strategic and critical materials stockpiling program.[3]

The Secretary of Defense is specifically charged with "the development and execution of a program to minimize the effects of attack, including informing and educating industry and the public in methods of survival. This includes a fallout shelter program, a warning and communications system, and a program to assist state and local governments in such post-attack community services as health and sanitation, maintenance of law and order, firefighting

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[2] A McGraw-Hill Special Report, Nuclear Attack and Industrial Survival (New York: McGraw-Hill Publishing Company, Inc, 1961) p. S16.

[3] Ibid.

and control, debris clearance, traffic control, provision of water supplies."[4]

Peculiarly, certain responsibilities assigned the Secretary of Defense, specifically those pertaining to the maintenance of law and order, firefighting and traffic control appear to functionally overlap the municipal-interest areas assigned to the Office of Emergency Planning.

The current organization for the Federal civil defense program, by design, meets all the constitutional, statuatory and customary requirements for civil control of the military. The Secretary of Defense, by assumption of the post of Head, Office of Civil Defense, has assumed an enormous and divergent responsibility.

The connotations of the word 'defense' infer a disparity of the meanings as applied to the job of 'maintaining a deterent capability' and 'preparing for enemy attack'. The Secretary evidently appreciates this disparity; for concerning the latter, he states:

> It is my considered judgement that this is a reasonable and prudent program--and that it is the best program we can have, measured against the other priorities of our national life.[5]

The Federal Civil Defense Program, being Federally

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[4] Ibid.

[5] R. S. McNamara, "Fallout Protection," Department of Defense Booklet H-6, (December 1961), Foreword.

administered, is separate from local and/or state jurisprudence. This separation has amounted to almost an aloofness insofar as its effects are felt at the municipal level. And yet, the Secretary has delegated immense responsibility when he charges:

> Shelter, warning, radiological monitoring, training and education are all parts of a total community civil defense program. The responsibility for integrating these parts, and relating the whole to the needs and capabilities of the community, necessarily falls on the State and local civil defense program.[6]

III. MUNICIPAL RESPONSE

It is extremely fortuitous that the local and state governments represent a comparatively large and singularly motivated regulatory force-in-being. This force would be alerted and utilized during emergencies. But, to be effective, these local law enforcement units will require directive support from centralized authority. Interviews with municipal officials have indicated a certain minimum level of assistance deemed desirable. This support should include instructions of policy and guidance; indoctrination of police in radiological techniques; national coordination of any planning, training or police effort; communication of any warning or post-attack assessment. Such guidance, in order to be nationally assimilated, must be promulgated nationally.

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[6] Ibid., p. 46.

Service schools, such as the Navy's Nuclear Weapons Training Centers represent an untapped source of instructional competency. These schools, under the stimulus of centralized direction, could be effectively utilized to indoctrinate municipal officials in nuclear effects. This municipality-oriented program could be complemented by a more sophisticated, unclassified, public program of instruction via television, radio and the press.

By such methods could the informational gap be continually bridged. By such methods could the continuity of policy and coordination be assured.

CHAPTER III

THE ENVIRONMENT OF CIVIL DEFENSE

It is not too peculiar that the nuclear weapon, conceived as a purely military device, should have brought about what may be called the paroxysm of the pariah. The weapon's extremely large radius of effect against targeted groups of humanity apparently necessitated other extremes by other groups. The largely uninformed citizenry became alarmed when they realized that here was a weapon which had been field-tested against two non-military targets.

War, and the horrible imagery of decimation, roosted like a hungry vulture overlooking Main Street, Home Town, U. S. A. In the rabid conjecture that followed this realization, when some of the Manhattan Project scientists professed to know Sin, some of these scientists also professed to know politics. The politicians lagged in their study of science, but other professions spoke out, singly and en masse.

I. CIVIL DEFENSE AND THE SCHOLARS

On the tenth of November, 1961, 180 members of the faculties of Boston, Brandeis, Harvard and Tufts Universities, and of the Massachusetts Institute of Technology, addressed an 'Open Letter' to the President of the United States. On 1 December, 1961, some

620 faculty members from California Institutions of learning followed suit.

Some three months after the Secretary of Defense had been charged with the duties of Civil Defense, these learned professors had this to say:[7]

> We are deeply disturbed by current developments in the field of civil defense. It appears to us that the prodigious energy of our people is being channeled into wrong directions for wrong reasons; and that continuation of this trend may be extremely dangerous to the nation and to civilization itself.

The letter goes on to make economic, military, political and moral pronouncements that are properly awesome:

> For example, it is said that civil defense is a deterrent. If it really protected us to the extent necessary for survival it might be; but at present its only deterrent value lies in the demonstration to the Soviet Union that we expect to have a war. Even on this point, it might in fact be argued that this is more likely to precipitate a pre-emptive attack than to deter one.

The letter builds to its didactic climax with:

> To sum up, we believe that although the present civil defense program, and in particular the construction of fallout shelters, might save a small fraction of the population in a nuclear war, this potential gain is more than offset by the fact that such activity prepares the people for the acceptance of thermonuclear war as an instrument of national policy. We believe that this acceptance would substantially increase the likelihood of war--a war which would be permanently fatal to our democratic society, even if not to all of us.

This Godivian pedantry finishes with a plea for the President to lead the nation forward on a race towards peace.

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[7] San Francisco Chronicle, December 1, 1961, p. 4 MG

This scholarly epistle is included as representative of the well-read, intestinally-dead class of erudite pronouncements on civil defense. But as to whether or not civil defense is integral to the national deterrent posture--

> McNamara disagrees. He believes that the Russians would not be too concerned with how many Americans they could kill, but how many Russians the Americans could kill in a counter-strike. This counter-strike force, he believes, is the true deterrent.[8]

II. CIVIL DEFENSE AND THE POLITICIANS

The astutely philosophical legislators, representing yet another group, also give warning of the effects of nuclear weapons.

Senator Stephen M. Young, a most vocal critic, says of civil defense:[9]

> Every hour around the clock nearly $12,000 of your tax money is channeled into federal, state and local programs of Civil Defense. And every cent-more than $1 billion in the last 10 years-is being wasted.

Senator Young delineates the devastation of nuclear attack in these words:

> Only in the far reaches of the back country, where fall-out would be the sole threat, could shelters hope to leave us any survivors, perhaps 10 percent of our population...Radioactive dust would cover everything, retaining its killing power for months, maybe years. What would survivors use for food?

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[8] San Francisco Chronicle, March 18, 1961, p. 21.

[9] Stephen M. Young, "The U. S. Should Scrap Civil Defense," True Magazine, (December, 1961), pp 57, 59, 120.

For water? For air? What could they do to help themselves before plague and disease set in and finished the work of annihilation?

The Senator concludes with this very pertinent and astute observation:

> Our only hope for defense rests in our ability to settle the explosive world situation and to retain strong powers of retaliation until we have done so. In lieu of universal disarmament, our offensive power is what constitutes genuine civil defense.

Another respected political personage is Mr. Nelson A. Rockefeller. The honorable governor of the State of New York criticizes the lag in civil defense effort in the appropriately dispassionate analysis:[10]

> A lagging effort cannot be excused by our conviction that nuclear war is a tragedy and that we must strive by all honourable means to assure peace. Strategically, we must remove temptation from an aggressor who might risk an all-out war if he thought he could destroy our most valuable asset--our people.

III. CIVIL DEFENSE AND THE PHYSICIST

A more apocalyptic treatise might be that of Doctor Edward Teller, who argues:[11]

> It is not too late for the United States to save itself and the Free World. By taking measures clearly within our reach,

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[10] "Charade of Civil Defense", The Nation, Vol 190, June 11, 1960, p. 509.

[11] Edward Teller, "Plan For Survival", The Saturday Evening Post, (February 17, 1962), pp. 32-37.

we can avert an all-out nuclear war. Having achieved that much, we can build a permanent world peace.

Doctor Teller, who has a working knowledge of the design, yields and effects of thermonuclear weapons, takes the view that one should prepare in order to defend oneself. He sets the basis of his argument in a proposal containing four measures of defense. These four points are so incisive as to be well worth inclusion here:

1. Develop an adequate passive defense in the form of shelters, civil-defense organizations, and means of rehabilitating the nation after attack. A nuclear attack on the United States would be horrible beyond imagination, but we must not only imagine it-we must prepare for it. An unprepared nation invites attack. Properly prepared, we can survive.

2. Having survived an attack, be able to strike the second blow. We have barely begun to build a strong second-strike nuclear force. This is different from our older concept of massive retaliation. In making certain that we could absorb and return an all-out nuclear attack, we attain a major but limited adjective: our survival as an organized society with an organized industrial complex and an advancing civilization. If Russia knows that we can survive and counterattack, she will never directly attack us.

3. Prepare for limited warfare--limited in scope, area, objectives, but not in weapons. Whenever Russia's ambiguous aggression degenerates into an outright attack on our allies, a localized, limited nuclear war should be our answer. It will be the alternative to an all-out, disastrous, nuclear world war. To prepare for a limited war, we must develop new kinds of diplomacy, battle tactics, nuclear weapons and fighting men. Today we are incapable of waging a limited nuclear war. We are unprepared politically, diplomatically, militarily and psychologically.

4. Having fully attained a passive defense, a second-strike nuclear force and a limited-warfare potential, we must realize that these three steps have bought us nothing but time. We must use that time to establish a lawful community of nations

to ensure lasting peace. Our goal can be nothing less than a world government based upon the principles of freedom and democracy.

Doctor Teller denies the existence of the threat of absolute destruction by any absolute weapon, but does admit to the existing threat of fear. He calls attention to the literary license employed by the author of the impressive novel, "On The Beach", and the perverting influence of such fiction. Even more important to the responsible reader was his logical and orderly presentation of the comparative costs of preservation. These realistic criteria for survival, though expensive, offer hope to those who care to consider the consequences of nuclear attack.

Doctor Teller concludes his argument with a cautionary request for an ideal supranational alliance of free democracies as a safeguard to minimize the chances of war. The second, third and forth points of Doctor Teller's article deal with post-attack recovery, limited warfare and national strategy respectively. The majority of the supplementary and complementary portions of the article are arguments in support and in defense of the first sentence of the first point; to "Develop an adequate passive defense in the form of shelters, civil-defense organizations, and means of rehabilitating the nation after attack".

Although Doctor Teller's article is very broad in scope, it is refreshingly direct and positive, and does not fall victim to that vein of venality that is so popular among the pundits of civil defense.

CHAPTER IV

GENERAL DEPARTMENTAL PLANNING RESPONSIBILITIES

There are certain limiting generalized results of a large scale nuclear attack that can be predicated from pure rationality. The casualty rates of nuclear weapon effects are largely academic, with the pertinent exceptions of Hiroshima and Nagasaki. Technicians who object to the artificiality of the Nevada tests are yet presumed to be reluctant to sacrifice a city such as New York in the interest of accuracy. It follows, then, that the estimates of effects generally reflect the limits of the initial assumptions. There is a cautious pessimism in attack, and an extreme pessimism in defense.

I. STIPULATED EFFECT ASSUMPTIONS CATEGORIZED BY RESPONSIBLE DEPARTMENTS

Food: Permanent large-scale contamination by fallout can not be substantiated by any physical hypothesis.[12] Therefore, it is suggested that food will not constitute a major problem in the immediate post-attack period. A self-serving theory, in the case of a large-scale attack, could suggest the probability of more

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[12] Samuel Glasstone, Effects of Nuclear Weapons (Washington, D. C.; Government Printing Office, June 1957), Chap. 9.

food surviving than people. Canned and packaged food protected by any structure that survives blast and thermal effects would suffer little direct fallout. The adequacy of potable water is a matter of concern for reservoir and river consumers.

The detailed Food Plan is under the aegis of the Department of Agriculture. This department also assumes responsibility for the protection of vegetation and animals against radiological, chemical and biological warfare.

Shelter: The Housing and Home Finance Agency is responsible for plans pertaining to emergency housing and community services in the immediate post-attack period. During this period, shelter availability will be largely a function of the degree of comprehension and cooperation of the surviving populace. Essential buildings that are available can be decomtaminated and utilized during the radiological-decay period.

Clothing: It is possible to round out the Food-Shelter-Clothing trio by a bit of redundancy. Here again, it is probable that more clothes than people will survive a large-scale attack. The problem of personal cleanliness in areas of contaminated water supply will be a function of this degree of surplusage of clothing.

Services: In the field of services, the most casual of investigations reveal an almost frightening vulnerability.

The drag-sensitive design of practically all elements of communication invites a high rate of interruptions and failures.

Exterior, but complementary to the potentiality of hardware failure will be the substantial weakening of the human link in the communication chain. Even the less astute can assume a certain degree of isolation during the immediate post-attack period.

To alleviate this condition, the major common carriers are hardening their facilities. Partial relief is generated by the observation that commercial organizations, such as Bell System, Western Union etc., possess crews trained in emergency repair.

Utilities: Utilities, in general, are extremely vulnerable to large scale attack. The concentration of power generation sites and the drag-sensitivity of power distribution systems certify service interruptions. Hydraulic shock or pressure loss will incapacitate water and gas mains outside of the immediate target area. The probable lack of adequate water head and power will immediately overburden even those adjacent sewage systems that remain intact.

Repair and reinstatement of these services is dependent on a comparatively small group of highly skilled technicians. One partially compensating qualification can be accorded the fact that the majority of these crews received their training during actual fire and flood disasters.

Medical: Services dealing with the health of the individual are under the aegis of the U. S. Department of Health, Education and Welfare. Here the limiting criteria for the determination of

overall efficiency appears to be critically dependent upon the number of people trained to handle casualties. The sophistication and efficiency of this training effort will naturally be a function of the degree of symptomatic-severity of the casualties. The very nature of the thermal and radioactive radiation consequent to large-scale nuclear detonation would seem to preclude a high degree of mass competence in prophylactic measures.

The most practical solution is probably the apparent. The Department has distributed 1900 of the 200-bed hospital units. 750 additional units are planned. All will have a 30 day medical supply and these hospital units are to be located exterior, but adjacent to population centers. The Department is readying a 'Medical Self-Help' program to provide basic medical training to civil defense groups and industrial disaster organizations.

Registration: The Post Office Department has the current responsibility for the registration of individuals and family groups. Without a pre-arranged simplified typeing and cataloguing of the desired information, this post-attack exercise would present only statistical migratory data. In fact, most communities have established alternate means of registration via such diverse groups as the Police departments, libraries or county clerks offices. This lack of coordination can only be due to the lack of a widely disseminated listing of primary Federal areas of responsibility.

II. POST ATTACK ASSESSMENT REQUIREMENTS

The above has been generally concerned with the diverse competence of the many people supporting the productive entity of the United States. Problems incident to the early post-attack period would be basically problems associated with national survival. These problems could be best assumed and best coordinated by the organization-in-control during and immediately following an attack. Since the emergency would be National, the controlling organization should be National.

In order for a centralized authority to make a sensible comprehensive decision regarding a post-attack course of action, it would be necessary that he have ready access to a fairly precise estimate of the extent of damage.

The area-of-interest of this centralized authority would expand, in time, from the immediate concern about counter-strike capability to include, later, the post-attack industrial-recovery capability. The time-lapse between these two concern-periods would probably be inversely proportional to the then existing level of confusion.

The field of battle has increased. For the first time in history, a field commander must command inexperienced undisciplined civilian 'troops'. No longer can simple orders elicit a predictable response. Without intelligent comprehensive consideration of

such diverse variables as money, meterology, men, materials and morality; no viable civilization can be rapidly restored. For those responsible few, this becomes a matter of data comprehension versus misinformed apprehension.

III. THE SKILLED-WORKER TARGET

The below listed casualty-spreads, for reasons of gradient simplification, are assumed to be proportional to area population densities. No attempt has been made to specify exact numerical and titular mortalities.

It is pertinent to observe here, that industrial and population concentrations coincide. Further, it is possible to achieve the casualty levels stipulated by specifying total destruction for certain strategic cities and ignoring their neighbors. This was not deemed realistic. Therefore, the listing of a city by name will refer to an area and infer inclusion of its immediate neighbors.

<u>30% Casualties</u>

54 Million Casualties.

Ethnical ethics?

Several questions pertaining to the accumulation, preparation and disposal of cadavers are irritatingly obvious. Would racial or religious prejudice preclude mass decontamination and burial? What would be the best method of allaying the fears and

debilitating the sensibilities of generically interested survivors?

Embalming fluid and technician shortages preclude normal preparation. Limited supplies of calcium-carbonate portend area contamination in the case of untreated disposition.

How much petroleum would the crematorium require?

How best to police the mentally unbalanced ghouls that such mass decimation might spawn?

How much time can the nation allocate to dispose of the dead and segregate, for efficient treatment, the wounded?

What is the optimum ratio of morale to morality?

But after the shock, the hysteria and the dead had subsided; what then?

It is technically doubtful that any true measure of relative victory could be rapidly assessed. However, the national ego requires that an English-speaking voice announce; "We won". It is just at this time that the organizational results of intelligent planning can alter the course of future events.

This figure of 54 million casualties could be achieved by a strike concentrated on our Industrial 'Glass Jaw'. This is the roughly-rectangular area bounded on the west by Chicago, the south to St. Louis, then east to Washington, thence northeast to Boston.

If the potential enemy were to desire a minimum weapon effort for maximum strategic effect, this would be the logical impact area. Holding to the original assumption of a gradient

rate of casualties, this attack would create 21 million specialized and supporting job vacancies in the critical industries area. This is the prime geographic area for the manufacture of durable and capital goods.

The basic reduction in numerical population, which would debilitate the national population only to that level held during 1940, does not properly specify the qualitative loss in industrial capability.

For rapid reconstruction, it is apparent that separative plant diversification could not be tolerated; although individual stockholders might suffer pecuniary losses. Maximum productive efficiency, for all critical goods, would be dependent on the rapid correlation and juxtapositioning of men, materials and machines. In the interest of minimizing the effects of individual dislocation, all routine labor functions should be automated as early in the reconstruction phase as practicable.

Specific priorities, including the order of magnitude of production, must be carefully established and continually monitored to achieve the best possible balance of the productive profiles.

An intelligent and perceptive Wage and Price control must be established quite early during such a reconstruction phase in order to preclude the pirating of skills from other equally essential industrial entities.

Systematic comprehensive monitoring of such diverse and complex data infers a sophisticated Electronic Data Processing system. Such a system should be capable of War-Gaming the National entity. Statistical data from such War-Games would enable the Chief Executive to attain certain planning courses-of-action. These propositions could be extrapolated into National Recovery Plans, and promulgated to regional Civil Defense Headquarters.

These statistical data should serve to generate a prediction of a desired industrial profile for all levels of damage and desired recovery rates. These data should indicate relative percentages of national industrial effort in specific complementary areas of technical specialty.

Since this would not be a free-competition economy, extremely sensitive and carefully selected data inputs would be essential. The degree of academic application should not be so studied, however, as to be omissive.

Culpable errors in industrial assessment would result in incorrigible waste. Production standards and quality control must be realistically balanced against criticality of needs.

Essential skills allocation: Preceptive changes in the industrial profile might range from a probable reduction in such a minor service-industry, as television repair, in order to augment the manufacture of electronic control devices or electrical machinery. While this example is patently a cross-industry

transfer; a more efficient allocation, without such gross dislocation, might be from an independent retail repair service to commercial repair of essential communication devices.

Relocation of essential skills: To illustrate a possible worker-reallocation. Within such job fields as the highly competitive gasoline service stations (286,000 employees) reposes a source of various mechanical aptitudes. For the majority of these workers, their work is both vocation and avocation. These individuals could realize their mechanical ambitions (and supplement the 154,000 automobile mechanics) under a slightly artificial, well directed control program. Alternately, the available petroleum products would then be retailed by non-essential dislocated typesetters or variety store clerks. A portion of the more qualified automotive mechanics might be best utilized in the repair of heavy equipment allocated to reconstruction. Mobility, for purposes of morale, should be voluntary insofar as the exigencies of the requirements-profile would permit.

The optimum effort-allocation to such diverse commodities as soap, sewing machines and shoes must be ordered to achieve maximum survivor productivity. The ramifications of whiskey rationing should be carefully weighed against the social and economic penalties of illicit alcohol manufacture.

Requirements: This ordered reconstruction will require, in addition to men and material, time. The results of a National

War-Game might furnish an insight into the amount of time required for the various stages of economic recovery. A program of gradual reduction of martial law and governmental controls could then be forecast. This Executive Calendar of Control would serve to alert local and municipal authorities of impending administrative vacua within areas of common interest. This calendar might also serve to reassure the scholars of political history.

Electronic Data Processing System Requirements: Any massive manipulation of manpower would require classification far exceeding that of the military induction system during World War II. Twice as many men to be mobilized in days instead of years.

Coordinated manipulation of this total assimilation of skills demands a careful evaluation of methods, and a rational interpretation of national goals.

The intent? Qualitative efficiency achieved with maximum utility and minimum dislocation.

Selection of pertinent skills: Even a casual investigation reveals that the cataloguing of miniscule individual skills would only serve to confuse data output interpretation. This, in turn, would saturate the analytical processes. A natural point of administrative initiation might be to catalogue only those professional individuals possessing a personal income exceeding some minimum value. The rationale being that those individuals contributing to the economy are important to the economy. Non-critical

semi-parasitic skills (such as entertainment and advertising) could be selectively culled.

The Internal Revenue Service is currently assigning each taxpayer a number.[13] This number, which is to be utilized in checking on the correctness of individual returns, could be readily complemented with a skills-qualification indexing code.

It might be eminently practical to index and catalogue skilled individuals currently in retirement. With the passage of the annual Federal Income Tax reporting period, individual records could be corrected to reflect the transfer of skills from the active roll to the retired list.

The above should not be construed to infer an argument for a Super Department combining the functions of Commerce and Treasury. The functions required apparently catalyze on or about the Bureau level. Previous Executive pronouncements indicate that such functions should operate under the aegis of the Secretary of Defense.

50% Casualties

90 million casualties. The population level would be reduced to that existing during 1900. Cadaver handling capabilities would be markedly decreased, even though the fatality incidence might be spread over a period of months. Definite mass

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[13] The San Francisco Chronicle, Friday, March 2, 1962, p. 3.

disposal procedures would be mandatory. "Bury thy neighbor" would not suffice.

The penalty of lowering National morale (an indeterminate quality) would act to mitigate and retard rapid industrial recovery. Positive programming and administration would be absolutely necessary.

Speculative academic extrapolation, in the medico-social sciences, could assist in estimating the rate of recovery of the National will. Such a study might indicate the amount and direction of a semi-panaceac program of propaganda.

In the national trauma following such decimation, a system of previously authorized job-assignments might assist in alleviating individual disturbances in the survivors.

A point readily apparent here is that certain psychological classifications should not be delegated traumatic-inducing chores.

Without arguing the question of the personal desirability of emerging from a shelter into such decimation, there is a limiting assumption-of-order in a pre-attack coding of individual qualities. Certain non-restrictive qualifications could be numerically assessed on driver licences, Social Security cards or other identification.

Skills classification: It is about this percentage-casualty point that individual classification fails to serve a pre-programmed recovery effort. With such massive eradication of

entire classes of skills, any realistic recovery plan must include provision for equally impressive talent importation.

Preparation for such a scale of international recruiting should be Federally formulated and administered through American-owned businesses abroad.

The legality of such action, with its direct economic implications, would be a function of the degree of foreign labor surplus and indigenous economic and social pressures. It is obvious here, that the talent-assessment should not extend below the level of the manufacturing entity. For maximum efficiency, entire plants should be recruited. If such a proposed course-of-action was accepted by our strategic planners, then it might be pertinent to suggest that courses in English language could be offered by these overseas plants. This assumption is also self-serving. It stipulates that decimation would not be world-wide, but it does point out the problem of awakening some morning to find India the worlds largest Industrial entity.

A cautious sub-rosa cataloguing of available professoral talent could operate to rapidly reestablish our educational capability. The amelioration offered by a statistical reduction in student numbers would be offset by the penalty of geographic dispersal. A rapid consolidation into specific schools of study might propose a productive efficiency.

International cooperation would be required in so many fields as to materially affect even a national effort at transporting this imported work force. One could only hope for a surviving extra-national George Catlett Marshall.

70% Casualties

126 million dead and dying. 54 million extra-urban survivors. The population would numerically approximate that of 1880.

A hypothetical extrapolation to this subordinate level of productive individuals indicates that the casualty figure of 70% was largely an academic supposition. Systematic, orderly cadaver disposition would be virtually impossible. Treatment of the symptomatic would be spasmodic at best, and largely ineffectual. The operative validity of any worker-skills analysis would be of such a low order and dependent on so many variables of assimilation and system input, that no rational or concrete productive profile would emerge. However, it is proposed that the skills-profile, while more sophisticated, would approximate the capability level of the 1880's. With the attendant dispersal of this semi-skilled working group, directed communications would be difficult.

These largely extra-urban survivors would be primarily an agrarian group located in comparatively isolated semi-insular community-islands clustered about scattered municipalities. Unless mobilized by Federal effort through strong communication links,

these communities might tend to remain agrarian due to systemic lethargy. Interests could devolve wherein group identity would become superior to national identity. However, they would have an occupational assurance of a mediocre form of survival. Security. This might be all one would desire.

Immigration: Large scale selective immigration would be needed in order to occupy territorial and technical frontiers. Labor requirements for agrarian survival would presumably encourage fecundity, even though genetic mutations would be probable.

It would not be necessary to obtain numerical superiority in labor-importation in order to significantly modify the religious and political beliefs of the indigenous survivors.

The indoctrination of such a heterogeneous force in the principles of Republican Democracy would entail a phenomenal educational effort. Perhaps this would be the proper point in history for an autocratic impressment of Democracy on all ethnic groups.

Factors common to the assumed casualty levels

There is a blatancy to the three pertinent factors common to the above listed casualty rates. First, there is a planning-need to relate National goals to survivor capability. Secondly, there is a requirement for an assessment of available skills.

Thirdly, there is a need for communication links to control these skills.

Although no prudent person would envision a business as usual post-attack atmosphere, a separate non-dependent communication link is in existence from government to worker through industry. It is perhaps fortunate that Industry operates with an organizational structure comparable to the military command structure.

A complementary realization, gained through our national experience in two previous wars, is that some degree of martial law will be incurred during such a crisis.

IV. REQUIREMENT FOR INDUSTRIAL COOPERATION

Industry can decrease the National post-attack recovery time by current planning of their future course of action. Although some industries have shown a remarkable foresight in the assumption of this responsibility, most are remiss in the preparation and promulgation of effective plans. The efficacy of the response of Industry may be largely dependent on the degree of urgency expressed by the centralized Federal Authority.

Industry possesses the most reliable catalogue of the relative degrees and types of competence attained by the individuals in their employ. After the recession of the initial post-

attack reaction, this general capability data could assist the efficient assignment of the available professional skills.

The numerical enormity presupposed by the analysis of individual skills infers the utilization of a sophisticated Electronic Data Processing system. Civil Defense Headquarters, presumed surviving, will possess the best available post-attack damage assessment. The degree of precision of this assessment, from which a directed course of Federal action must be proposed, will be a function of the accuracy of the data inputs, and the alacrity with which such data is processed.

The cataloguing and analysis of damage to specific manufacturing sites is within the capability of currently existing machines. No major redesign would be incurred in extending this capability to include the specialized skills of the top executive and supervisory personnel of these industrial entities. The problem is complicated only to the extent that only pertinent data should constitute the input to the device. Skills-cataloguing should be limited to those qualifications considered urgent during the emergency--or initial--phase of reconstruction. The recovery of normal communication channels would alleviate the exigencies of centralized martial direction.

The degree of Federal interference required during this industrial recovery phase will be a function of many variables. These variables, such as a potential plant-and-worker cannibal-

ization of one productive entity by another, can only be predicted by astute and sophisticated analysis of pertinent data uncluttered by unimportant trivia. This analysis should be productive of a logical Pre-Attack Plan which would then be promulgated throughout industry for guidance. Industrial executives could then formulate a course of action to satisfy specific future requirements, based on the best-available estimates of damage. This Pre-Attack Plan should be designed to reduce, as much as is then foreseeable, wasted productive time, money and effort. This plan must be realistic and easily implementable to assure adequate Industrial response.

Industrial reassurance will be dependent on the immediate post-attack efficiency and the degree of Federal guidance under such a plan.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary:

Requirement for planning: The simplest of statements may infer broad responsibilities. President Kennedy, in his special television broadcast on the night of July 25, 1961 summarized pertinent incidents leading up to his appointment of the Secretary of Defense as Head, Civil Defense. The President prefaced this disclosure with these words: "We have another sober responsibility. To recognize the possibilities of nuclear war in the missile age, without our citizens knowing what they should do or where they should go if the bombs begin to fall, would be a failure of responsibility."

Post-Attack autocracy: Thus, the President united at the highest civilian level of Defense, both Military and Civil Defense. With this executive assignment, the President has inferred the probable execution of martial law, under Civil direction, during a post-attack emergency.

The Secretary of Defense is evidently in agreement, for in his statements before the House Military Operations Subcommittee on August 1, 1961, he said:[14] "The placing of civil defense

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[14] A. Brynes and G. Underhill, "Shelters and Survival," The New Republic, (January 15, 1962), p. 7.

responsibility under the Department of Defense should facilitate a common (Military-civilian) effort to plan for, and if necessary, to conduct emergency operations."

Industrially oriented population: The 180 million population of the United States represents a specific productive entity comprised of many variable factors. The sum total of the effect of large scale nuclear attack on this productive entity can not be accurately predicted.

Precision of Post-Attack assessment: The accuracy of the post-attack damage assessment would be a function of the then-existing environment. Environmental limits assume essentially simultaneous offensive detonations. The counter-strike reaction capability of these United States assures the assessor of a limiting offensive simultaniety of attack.

Requirement for Post-Attack Plan: One factor limiting detailed centralized control of all productive entities would be a shortage of general communications during the immediate post-attack period. A plan should be formulated and promulgated to furnish guidance and direction during this immediate reconstruction period.

The degree of confidence that such a plan would generate would be a function of the realism with which it predicted the needs and requirements of the industrial complex and the civilian economy. The execution of such a plan presupposes an established

communication link. Fortunately, subjective discipline requires a familiarity with authority. For the majority of the populace, municipal supervision must suffice. A natural and easily accepted propaganda communication link to the skilled individual exists via the industrial executive chain-of-command. In this manner, the industrial populace would constitutionally remain under familiar civil authority.

Conclusion:

In order to realistically appraise the post-attack damage situation, a large quantity of data must be rapidly assimilated. The compilation, impartial assimilation and unprejudiced analysis of these data can best be handled utilizing Electronic Data Processing systems. The reliability of system output will be dependent upon the unemotional realism of data inputs. The studied application in a peaceful academic environment would be most productive of realistic evaluation.

The rapidity of post-attack Industrial mobilization would be materially assisted by a specific knowledge of the immediate requirements of the economy. Potential shortages in critical skills, material and manufacturing capability would argue toward a sincere effort to preclude duplication and waste.

The most efficient correlation and coordination of the surviving productive entities would be via a centralized authority under the direct aegis of the Chief Executive. In this manner,

strategic essentiality could be rapidly judged and critical national capability assessments could be made.

There is in existence in the United States, an apathetic confusion relating to matters pertaining to Civil Defense. This is profiled across the nation in accordance with the degree of the immediacy of apparent target-priority. Emotionalism, rather than realism, is the masochistic methodology of the news media. This could be largely overcome by a national training program under centralized direction. This should present the best available prognosis on the strategic effects of a nuclear attack. Initial release of realistic effects-data and strategic war-game results could be made to responsible local and municipal governments utilizing instructional talent available. A sophisticated Federally administered propaganda program should be promulgated via the public communication channels.

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